Lower Winooski Basin Planning Process
Draft goals, objectives and potential actions to date – 1/15/10

I. Treating stormwater from residential and urban areas

Goal 1: Assist the community in addressing stormwater not presently treated through State and federal regulatory processes. In particular, residential landowners will be encouraged to treat stormwater generated by their property. Municipal actions to assist in stormwater retrofits will also be encouraged.

Objective 1: Provide educational opportunities to all sectors of the community

Get messages out most efficiently and to a larger audience by provide education at pre-scheduled meetings, celebrations, and other events instead of planning new events. Examples include

- Set up displays and provide literature at garden shows, Green Up day events
- Present to groups that use the water, e.g., boaters and anglers.
- Arrange for temporary displays at museums, e.g., the Lake Champlain Maritime Museum.

Use social networking tools to reach people who may not be able to attend meetings

- Provide information through Front Porch forum or other neighborhood listservs or distribution lists

Educate children

- Educate children through place-base educational efforts. For example, children who collect monitoring data for streams in their community can also help to educate community by presenting it. The Mid Winooski urban restoration and public outreach project is a good example. See: http://www.vacd.org/winooski/winooski_MWWUROP.shtml
- Encourage service learning projects like stenciling storm drains

Engage the community by developing an effective message, identifying advantages (incentives) to the community either through monetary advantages or community support. Identify barriers and develop programs that avoid barriers that would deter people. Examples follow:

- Florida has an effective slogan: “Pointless Pollution”
- Let people know the benefits of rain barrels and rain gardens: saves money on water bill and rain water better for plants.
- developing a “adopt a stream” program to encourage participation in clean up efforts
- Begin a neighborhood effort in a tight knit community, use “Absorb the Storm” publication.
- Find other incentives to reward people for protecting water quality: reduced stormwater utility fee was one suggestion, although it may be difficult to enforce.

- Distribute existing publications that encourage implementation of residential stormwater bmps, e.g., "Absorb the Storm" publication, Smartwater Ways and South Burlington efforts.

Publicize efforts to groups that could provide assistance in supporting collaborative efforts or implementing water quality improvement projects

e.g., Lake Champlain Basin Program Citizen Action Committee

Objective 2: Encourage municipalities to develop water quality friendly policies, ordinances, etc.

Encourage town level stormwater management to address stormwater treatment on development that does not trigger state review, includes, small-scale less than an acre

VLCT is good link btw towns and ANR. Planning commissions are good place to begin discussion

Assist towns in encouraging cluster development. Develop a model ordinance. Most towns have language in their town plans that encourage cluster development; no towns actually have taken next step of requiring it.

Objective 3: Assist towns in retrofitting existing development with stormwater treatment. Assist towns to identify funding mechanisms for treating stormwater: grants, utility mechanisms

Help towns identify incentives for property owners to voluntarily treat their own stormwater e.g., town will maintain if property owner installs; town provides order form for rain barrels and delivers.

Help towns and community groups identify high priority stormwater treatment opportunities through planning

Map stormwater infrastructure and use to identify best stormwater treatment retrofits and assist in project implement. Encourage conservation commissions to participate.

Develop a river management type assessment for stormwater, e.g., Barlett Brook culvert analysis by Even Fitzgerald for S. Burlington

Encourage residents to identify areas for treating stormwater: obvious flows that collect but are not detained or infiltrate

Help towns and community implement projects based on plan if available

Encourage collaborative efforts with conservation commissions, watershed groups, etc. Consider mobilizing a number of groups to focus on developing several demonstration projects in one town to increase visibility within the town.

Identify stormwater infrastructure that could be improved either by adding treatment or removing sources of contamination (residential wastewater)

Where towns don't want to be liable for the maintenance of stormwater infrastructure and new LID practices, engage community groups, like garden clubs, etc., to sponsor and maintain rain gardens.

Resolve any issues towns might have over liability issues.

Provide assurance that present insurance would cover potential liability problems (Vt League of Cities and Towns assist?)

Provide incentives for towns: provide information on the cost-effectiveness of LID practices over traditional treatment structures, e.g., cleaning out sediment basins.

II. Managing roads and parking lots to protect water quality

Goals: Reduce the amount of sediment and other road and parking lot related pollutants from entering surface or ground water

Objective 1: Incorporate practices to protect water quality into the building or improvements of roads, bike paths, sidewalks and parking lots.

Help towns promote development that protects water quality and respects the river corridor

- Building new roads
  - guidance to municipalities in reviewing new roads – Milly Archer
  - Balancing safety with natural resource protection, examples exist within South Burlington, Essex Jct, and Colchester zoning.

Provide incentives to developers to use LID technologies

Prioritize use of effective but more costly stormwater treatment practices in watersheds currently threatened, but not yet impaired.

Ensure that LID type practices that encourage infiltration will not threaten the integrity of ground water supplies and existing investments in underground communications and utilities.

In redevelopment of Municipal and State roads, communities often want curbs, particularly when new sidewalk(s) are proposed. Addition of curbs often does not trigger a state stormwater permit, but can have a substantial adverse hydrologic and water quality

impact where stormwater used to sheet flow off the road. Need to encourage alternatives to curbs that do not concentrate flow. More coordination is needed between state, towns and designers to better understand and more appropriately mitigate impacts.

Objective 2: Promote the use of erosion control and maintenance techniques that save money while protecting and enhancing Vermont's lakes and streams.

Existing programs are available to help towns address road related water quality problems and have been successful. The majority of town road crews in the watershed are now using the erosion control and maintenance techniques.

Encourage the use of hydroseeders. Towns have also banded together in Addison and Lamoille counties to buy and share equipment like hydroseeders, making seeding and mulching open soil a much easier and cost effective process.

Encourage towns to apply for Better Back Roads grants. The majority of towns in the watershed have applied for and received at least one grant. Focus on encouraging towns that have not yet applied for a grant.

Help towns prioritize roads for maintenance. Include water quality benefits as one of the criterion.

Improve maintenance of stormwater ponds. Towns could take over maintenance of privately owned ponds if they formed stormwater utilities.

Assist multiple landowners and agencies to address road-related stormwater problems that cross jurisdictions and property lines.

Objective 3: Reduce the amount of salt used and reduce the amount of winter sand that reaches waterways

Strategies:
Encourage smaller parking lots in new development

Investigate alternative techniques for protecting drivers and pedestrians from ice, but be aware of their potential environmental impacts.

Provide information to landowner and towns about alternative techniques. Provide technical and financial assistance to assist them in implementing alternative practices.

Private landowners and towns are very aware of liability if they do not clean snow and ice off roads, sidewalks sufficiently to protect drivers and pedestrians. Perhaps look to legislature to provide legal protection to property owners as long as they follow specific practices.

Discuss potential for changing expectations from the community about road conditions in the winter. VTrans has developed three tiers of expectation for road conditions that is applied to their road system. These are public documents, putting the public on notice for what to expect.

Objective 4: investigating extent of PAH contamination from coal tar sealants and encourage reduction of use.

III. Stream crossings to protect aquatic organism passage and stream equilibrium

Goal: Stream crossings should protect aquatic organism passage where needed and/or accommodate passage of upstream flows, sediment load and debris.

Objective 1. Identify stream crossings that are not adequately sized or placed

Potential actions:

Promote the use of the *ANR Bridge and Culvert Assessment*[1] assessment protocol and encourage the implementation of its recommendations by private landowners, town and VTrans road crews. The assessments are an important part of the DEC river corridor plans and are most useful when conducted by trained personnel. The assessments can be most useful to road owners to help plan for future replacements, especially for identifying funding sources. Towns can incorporate the expense into capital budgets or identify appropriate grant programs. These assessments are the most successful when the town and town road crew understand the financial as well as ecological benefits and are willing to develop a work plan based on the assessment. Community groups that have supported the assessment play an important role in bringing it to the attention of their town.
Culvert assessments would also be valuable for:

- Helps the state prioritize their road projects
- Evaluate structures for potential failure due to expected changes (often new development) higher in watershed that will result in increased flows or sediment loads.
- Part of geomorphic assessment to identify stresses to the river corridor.

Identify streams/subwatersheds where improving or protecting fish passage should be prioritized. Work with DFW fisheries biologist:
existing fish population adjacent to good habitat, good water quality? Potential Projects: First couple structures coming out of the Winooski?

[1] developed by ANR Dept. Fish and Wildlife and the River Management Program see http://www.anr.state.vt.us/dec/waterq/rivers/docs/rv_SGAB&CProtocols.pdf).

Encourage individuals or groups to provide evidence of blocked fish passage to DFW fisheries biologists. Knowing where good fishing reaches are located and where they end may be used to identify points of concern relating to fish passage.

Objective 2: culverts will be correctly sized and installed

Potential actions:

Continue to inform towns of available technical assistance for the installation or replacement of culverts. DFW fisheriers biologist, DEC stream alteration engineer and USFWS staff are available to review plans and provide technical assistance to protect or enhance fish passage in larger streams and to ensure the adequate passage of water, sediment and debris. Review by agency staff of culvert installation or replacement is required where work is completed in rivers with watersheds over 10 sq miles.

Encourage towns to develop ordinances that specify culvert sizes for new driveways and roads that best protect the stream and fish passage and infrastructure. The agency, Vt. League of Cities and Towns and … are available to assist towns in developing ordinance.

Educate road crews and contractors about appropriate installation techniques to reduce the number of incorrectly installed culverts. Encourage action by connecting well installed culverts with an improved resource, for example, good fishing spots. Examples of educational opportunities include:

Workshops for town road foreman and contractors hired by towns
Municipal employee workshop by RSEP
Review of permitted culvert replacement by staff
Technical assistance by USFW and ANR staff

Objective 3. Assist in identifying funds for installation of adequate stream crossing structures

Potential actions:
Encourage towns to plan for expensive culvert replacements by including them in the capital budget

Help identify and develop culvert replacement projects based on existing or potential funding opportunities.

Projects can be identified through reports or assessments (examples follow)

- Vermont's Wildlife Action Plan November 22, 2005 see Appendix B Habitat & Community Summaries to identify species of greatest need for protection (pp 53 and 62)
- River corridor reports
- Informal culvert data
- Problem culverts identified by road crew – use Better Back Roads staff or regional planning commissions to do these inventories

Available Funding Sources for Assessment and Culvert Replacement

- VTrans
- USFWS – They like to see larger projects that include protection of multiple resources.
- TNC (using USFWS funds)
- TU National
- State Wildlife grant funds
- Clean and Clear Center grants
- Vermont Watershed Grants
- Army Corps of Engineers through the LCBP
- FEMA grants: HMGP, PDM, FMA

IV Wetland restoration

Goal: Increase phosphorus uptake from wetlands through the restoration of degraded wetlands

Develop and implement projects to restore degraded wetlands, prioritizing those with the greatest potential for water quality protection and phosphorus removal. A secondary benefit of wetland restoration is to provide enhanced fish and wildlife habitat. Collaborate with others to ensure future funding for restoration work, landowner compensation, technical assistance as well as outreach to encourage landowner participation.

Partners: USDA-NRCS; CCPRC; USFWS; ANR-CC
Funding sources: WRP, CREP, WHIP, CCC (see http://www.vt.nrcs.usda.gov/programs/wrp/ for additional information)

V. River Corridor Protection

Goal: Restore and protect the natural stability of rivers and minimize flood damage

Objective 1: Support efforts that lead to corridor protection and work towards natural stream stability.

Potential actions:

Offer funding and technical assistance in support of local projects that are part of a larger river corridor protection initiative.

Review corridor plans or studies to identify potential projects. The following streams in the lower Winooski have corridor plans or studies: Huntington River; Alder Brook; Mill Brook; Muddy Brook; Centennial Brook; Lower Winooski; Joiner Brook; Sucker Brook

and Allen Brook. The reports can be found at:
https://anrnode.anr.state.vt.us/ssl/sga/finalReports.cfm

Suggested actions based on the Alder Brook Geomorphic Assessment and community discussion

- Educate town about impact of new development on Alder Brook.
- Assess tributaries that appear to be delivering large amounts of sediment to the main stem (see report)
- Best approach to treating old stormwater may be through towns. Funding source through stormwater utility could be explored, ask Burlington where they get funding.
- Residential educational campaign to encourage absorbing of stormwater where it falls, perhaps encourage action by describing potential for loss of property in future
- Investigate simple ways to treat stormwater, e.g., removal of curbs to allow sheet flow of stormwater, resulting in more infiltration
- In upper watershed above Route 15: address stormwater leaving Clover Drive neighborhood, plant trees in this area and above to reduce water temperatures, fence cows out of stream higher up, protect river corridor in this relatively undeveloped area.
- Look for wetland restoration projects in upper Alder Brook.